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TITLE : FIBER GLASS REINFORCED
PLASTIC PLATE MATERIAL AND
MANUFACTURE THEREOF

ABSTRACT : PURPOSE: To improve the fatigue resistance of a fiber glass reinforced plastic (FRP) plate material by simple after-treatment process by a method wherein the FRP plate material is formed in the predetermined shape and, after a load to deflect the resultant plate material is applied, the surface on tension stress side of the plate material is heated up to near or higher than the glass transition temperature of the resin and the plate material is cooled down as the load is applied to it and finally the load is removed.

CONSTITUTION: A jig 5 is set at the middle in the longitudinal direction of a FRP plate material 1, both the ends of which are respectively supported by a base frame 10 through cover plates 6 and 7 and supporting members 8 and 9. By moving the jig 5 upwards, the plate material 1 is deflected in the same direction as that in use in order to develop tensile stress on tension stress side 3 and compressive stress on compression stress side 4. Under the load is held, the tension stress side 3 is heated with a heating means 11. The heating temperature is near the glass transition temperature of the resin. After heating is stopped, the plate material 1 under the state being applied by the load is cooled down. The load due to the jig 5 is relieved. As a result, residual compressive stress is developed near the surface on the tension stress side 3 of the plate material 1. Said residual compressive stress reduces the compressive stress developed on the tension stress side 3, when the load is urged in the direction shown by the arrow F in use, resulting in improving the fatigue resistance of the FRP plate material 1.

